

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6b

Date of Meeting October 27, 2009

DATE: September 25, 2009

TO: Tay Yoshitani, Chief Executive Officer

FROM: George England, Program Leader, Aviation Project Management Group
Elizabeth Leavitt, Manager, Aviation Environmental Programs
Richard Ottele, General Manager, Aviation Facilities and Infrastructure

SUBJECT: Perform design and construction of new stormwater quality improvements at Northeast and Southeast portions of airfield to meet national permit requirements.

Amount of This Request: \$0

Source of Funds: Previously Authorized

ACTION REQUESTED:

Request Port Commission authorization, using previously authorized funds under the Comprehensive Stormwater Management Program (CSMP), to:

- 1) Prepare final designs and construction contract documents; negotiate and execute a service directive under an existing professional services agreement for final engineering and construction management support; and
- 2) For Central Procurement Office to advertise for construction bids;

for the Stormwater Adaptive Management work in the SDE4/SDS1, SDN1, and SDS4 stormwater sub-basins for an estimated total project cost of \$1,500,000.

SYNOPSIS:

The Comprehensive Stormwater Management Program (CSMP) was initiated in June 2002 in response to permit conditions associated with the Airport's Master Plan Update. Numerous stormwater facilities were designed and constructed to meet regulatory requirements and are currently operational. The stormwater program has now moved into its Adaptive Management phase under which additional or upgraded stormwater facilities will be implemented, as needed, to meet new regulatory conditions or to resolve other stormwater problems not previously anticipated. Earlier commission authorizations anticipated this work. As a result, no budget is necessary for this work. The proposed work, which is part of the CSMP Adaptive Management phase, involves capital upgrades to existing stormwater quality treatment facilities and

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construction of additional facilities in the SDE4/SDS1, SDN1, and SDS4 drainage sub-basins (see attachment 1 for locations). The work is intended to provide increased treatment capability to meet the effluent limits set forth in the new (effective April 2009) Stormwater National Pollutant Discharge Eliminations System (NPDES) Permit that regulates stormwater outfalls at the Airport. This work will reduce the risk of non-compliance with the permit conditions. Implementation will be as a major public works project.

PROJECT DESCRIPTION AND JUSTIFICATION:

Stormwater flow control and water quality treatment facilities best management practices (BMPs) were implemented during 2005 through 2007 under the CSMP and are now operational. The Stormwater Engineering Report submitted to the Department of Ecology guided the implementation of BMPs to meet the effluent limitations prescribed in the NPDES permit in effect at that time. The BMPs were based on an All Known Available and Reasonable methods of Treatment (AKART) report approved by Ecology. The original design and construction of each CSMP facility incorporated an approach focused on minimizing initial capital costs with the understanding that future upgrades may be needed to meet the conditions of a renewed, but more stringent, NPDES permit. In 2006, the Adaptive Management phase of the CSMP was authorized to provide for increased treatment capability, if needed. The renewed NPDES permit became effective in April 2009, the permit lowered copper, and zinc effluent limits as summarized in the following table:

| Receiving Water | Associated Outfall | Copper* | | Zinc* | |
|---|--------------------|-----------------|----------------|-----------------|----------------|
| | | Previous Permit | Renewed Permit | Previous Permit | Renewed Permit |
| East Branch Des Moines Creek | SDE4/SDS1 | 63.6 | 25.6 | 117 | 117 |
| West Des Moines Creek and Northwest Ponds | SDS4 | 63.6 | 32.2 | 117 | 71.4 |
| Lake Reba | SDN1 | 63.6 | 28.5 | 117 | 117 |

(*micrograms per liter)

Water quality monitoring of the sub-basin outfalls conducted over the last several years provides data on the effectiveness of pollutant removal. The monitoring data has revealed several instances where copper and zinc concentrations exceeded the limits set forth in the renewed permit. Except for one exceedance that occurred in August 2009, approximately twelve other exceedances did not cause permit non-compliance conditions since they occurred when the previous permit was in effect.

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In response, under the Adaptive Management phase of the CSMP, selected stormwater sub-basins were evaluated to determine what additional BMP improvements could be made to reduce the risk of exceeding effluent limits in the renewed permit. The proposed work is an outcome of that evaluation.

Several previous Port Commission actions authorized the entire CSMP. The Adaptive Management phase was identified as an element of the CSMP scope of work in an April 11, 2006 Commission action. Funding for this project request is included within that 2006 authorization.

Project Statement:

Design and construct stormwater capital improvements to the SDE4/SDS1, SDN1, and SDS4 drainage sub-basins, including new facilities and upgrades to existing facilities, to increase water quality treatment capability by December 2010 for a total project budget of \$1,500,000.

Project Objectives:

Increase treatment capability in three stormwater sub-basins to reduce the risk of exceeding effluent limits set forth in the renewed NPDES permit and being in a permit non-compliance condition.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

SDE4/SDS1 Sub-Basin: Modify two existing bio-swales to improve bio-infiltration and treatment capability. Modify an existing vault to enable separation of the SDE4 and SDS1 flows into separate bio-swales.

SDN1 Sub-Basin: Install a new pond drainpipe, using either a siphon or gravity flow pipe with pump backup capability and an infiltration system to enable modified pond operation in batch mode during summer low flow conditions, or install a new energy dissipation structure on the pond inflow pipe to reduce re-suspension of settled material captured in the pond.

SDS4 Sub-Basin: Install a new bio-filtration and media contact channel downstream of the existing flow control pond to provide water quality treatment.

Schedule:

- Design completion: February 2010
- Bid and award completion: May 2010
- Construction and commissioning completion: September 2010

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STRATEGIC OBJECTIVES:

This project supports the following Port-wide strategies to exhibit Environmental Stewardship through our Actions to become the cleanest, greenest, and most energy efficient Port in the world.

The project also supports the Airport's Environmental strategies:

- **Improve Water Quality:** Implement stormwater best management practices to improve stormwater runoff quality.
- **Meet Environmental Obligations:** The Port is obligated as a steward within the community to comply with all environmental regulations. In addition, the conditions within the 401 Certification and other permits are mandatory and must be complied with as part of the implementation of the Master Plan Update.
- **Monitor for Long-term Compliance (2002-2017):** As a direct requirement of the 401 Certification and other permits, the Port is obligated to monitor stormwater quality and quantity and ensure protection of local creeks.

FINANCIAL ANALYSIS:

Capital Budget/Authorization Summary:

This project utilizes existing surplus and previous authorized stormwater budget for adaptive management work. No additional budget is requested. The following capital budget and authorization summary is for CIP 102030, Comprehensive Stormwater Management Program:

| | |
|-------------------|----------------|
| Original Budget | \$76,749,495 |
| Budget Transfers | \$(17,134) |
| Revised Budget | \$76,732,361 |
| Budget Reductions | (\$18,276,573) |
| Current Budget | \$58,455,788 |

CIP 102030 includes \$12,400,000 identified for potential projects in the Adaptive Management phase; approximately \$454,000 has been expended to date for other Adaptive Management efforts.

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| | |
|---|---------------|
| Previous Authorizations | \$78,853,027 |
| Authorization Transferred with Budget Transfers | \$(2,120,666) |
| Net Previous Authorizations | \$76,732,361 |
| Current Request for Authorization | \$0 |
| Total Authorizations | \$76,732,361 |
| Estimate of Remaining Budget to be Authorized | \$0 |

Project Cost Breakdown:

| | |
|-----------------------------|------------------|
| Construction plus sales tax | \$1,138,000 |
| Design | \$156,000 |
| Other | <u>\$206,000</u> |
| Total | \$1,500,000 |

Source of Funds:

The project is included in the 2009 – 2013 capital budget and plan of finance under CIP 102030. The funding source will be Airport Development Fund 03040.

Financial Analysis:

| | |
|--------------------------------|---|
| CIP Category | Compliance |
| Project Type | Environmental |
| Risk adjusted discount rate | Not Applicable |
| Key risk factors | Not Applicable |
| Project cost for analysis | \$1,500,000 |
| Business Unit (BU) | Stormwater costs are allocated 86% to Airfield cost center and 14% to Landside |
| Effect on business performance | NOI after depreciation for this project will be positive due to recovery of 86% of the operating and capital costs in the airfield cost center through landing fees |
| IRR/NPV | Not Applicable |
| CPE Impact | CPE will increase by less than \$0.01 in 2011. However, no change to business plan forecast as this project was included. |

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SUSTAINABILITY AND LIFE CYCLE COSTS:

Stormwater quality treatment facilities require on-going maintenance to perform at the design intent and work towards meeting regulatory conditions over the long run. The proposed treatment bio-swale at the SDS4 site and the drainpipe, infiltration system, and energy dissipater at the SDN1 site will be new facilities requiring a slight increase in the overall stormwater maintenance level of effort at a cost of approximately \$2,000 per year, which will be addressed in the 2011 and subsequent annual Maintenance Department budgets. The proposed work at the SDE4/SDS1 site involves upgrades to existing facilities and is therefore not expected to change the current level of maintenance effort.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1 – Implement the facility upgrades and additions as proposed. This alternative will substantially increase treatment capability and reduce the chance of exceeding effluent standards that would result in permit non-compliance. This is the recommended alternative.

Alternative 2 – Reduce the scope of the proposed work by eliminating one or more of the facility upgrades or additions. This will reduce the project budget, but will not provide the increased treatment capability believed to be necessary to significantly reduce the risk of exceeding effluent limits. This alternative is not recommended.

Alternative 3 – Do not implement any of the proposed improvements. The facilities would remain in their existing condition, exceedances of effluent limits would likely occur in the future, and an increased probability of permit non-compliance situations would result. The Department of Ecology could impose penalties for permit non-compliance. This alternative is not recommended.

TRIPLE BOTTOM LINE:

The CSMP is driven by Port environmental stewardship, environmental regulatory requirements, and the mandatory conditions of the 401 Certification for the Master Plan Update and NPDES 402 Permit. The program provides a cost-effective means of accomplishing necessary environmental regulatory requirements. Facilities completed under this program provide an overall benefit to the drainage basins, the community, and the region by enhancing stormwater flow control and water quality that enhances fish habitat and improves the ability for further development within the Airport and the adjacent communities.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

Previous Commission funding actions on CIP 102030 Comprehensive Stormwater Management Plan include:

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- On June 11, 2002, the Commission authorized \$1,000,000 to conduct preliminary studies and finalize program definition and planning for a new Comprehensive Stormwater Management Program, CIP 102030.
- On March 11, 2003, the Commission authorized \$9,354,000, which included an additional \$4,125,000 for continuation of CIP 102030 Comprehensive Stormwater Management Program Plan and Definition; \$3,731,000 for initiating CIP 102108 Drives Connection to IWS Project; \$668,000 for initiating CIP 102109 Stormwater Pollution Prevention Project; and \$830,000 for initiating CIP 102146 Low Flow Pilot Program.
- On February 10, 2004, the Commission authorized \$10,000,000 for continuation of CIP 102030, Comprehensive Stormwater Management Program Plan and Definition.
- On May 5, 2005, the Commission authorized \$14,981,000 for continuation of CIP 102030, Comprehensive Stormwater Management Program Plan and Definition.
- On October 25, 2005, the Commission authorized \$12,408,000 for continuation of CIP 102030, Comprehensive Stormwater Management Program Plan and Definition.
- On April 11, 2006, the Commission authorized an additional cost of \$36,208,000 for continuation of CIP 102030, Comprehensive Stormwater Management Program Plan and Definition. Funding for Adaptive Management phase stormwater projects was authorized by this action.
- On March 31, 2009, the Commission authorized final design and construction of capital upgrades to the North Snowmelt and North Cargo stormwater pump stations under the Adaptive Management phase of the CSMP.